(12) INTERNATIONAL APPLICATION PUBLISHED UNDER THE PATENT COOPERATION TREATY (PCT)

(19) World Intellectual Property Organization
International Bureau

(43) International Publication Date
20 October 2005 (20.10.2005)

PCT

(10) International Publication Number
WO 2005/097308 A1

(51) International Patent Classification[7]: B01F 5/00, F04B 53/16

(21) International Application Number: PCT/IB2004/051643

(22) International Filing Date: 1 September 2004 (01.09.2004)

(25) Filing Language: English

(26) Publication Language: English

(30) Priority Data:
PR2004A000031 9 April 2004 (09.04.2004) IT

(71) Applicant *(for all designated States except US)*: **NIRO-SOAVI S.p.A.** [IT/IT]; Via Mario da Erba Edoari, 29, I-43100 PARMA (IT).

(71) Applicant and
(72) Inventor *(for US only)*: **GRANDI, Simone** [IT/IT]; Via Campi, 10, I-43038 SALA BAGANZA (PARMA) (IT).

(72) Inventor; and
(75) Inventor/Applicant *(for US only)*: **GANDINI, Marco** [IT/IT]; Via Berzioli, 2, I-43100 PARMA (IT).

(74) Agent: **BUGNION S.p.A.**; GOTRA Stefano, Via Garibaldi, 22, I-43100 PARMA (IT).

(81) Designated States *(unless otherwise indicated, for every kind of national protection available)*: AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BW, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, EG, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NA, NI, NO, NZ, OM, PG, PH, PL, PT, RO, RU, SC, SD, SE, SG, SK, SL, SY, TJ, TM, TN, TR, TT, TZ, UA, UG, US, UZ, VC, VN, YU, ZA, ZM, ZW.

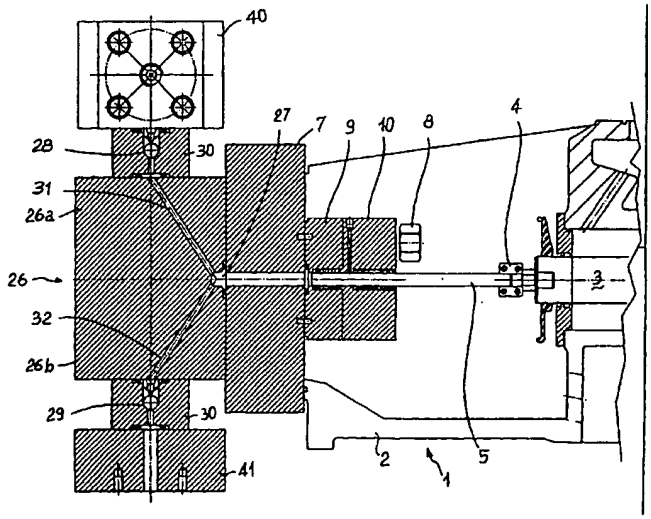
(84) Designated States *(unless otherwise indicated, for every kind of regional protection available)*: ARIPO (BW, GH, GM, KE, LS, MW, MZ, NA, SD, SL, SZ, TZ, UG, ZM, ZW), Eurasian (AM, AZ, BY, KG, KZ, MD, RU, TJ, TM), European (AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, HU, IE, IT, LU, MC, NL, PL, PT, RO, SE, SI, SK, TR), OAPI (BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG).

Declarations under Rule 4.17:

— *as to applicant's entitlement to apply for and be granted a patent (Rule 4.17(ii)) for the following designations AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BW, BY, BZ,*

[Continued on next page]

(54) Title: A HOMOGENISER FOR THE CONTINUOUS TREATMENT OF FLUIDS AT VERY HIGH PRESSURE.



(57) Abstract: A homogeniser (1) for the continuous treatment of fluids at very high pressure comprises at least one reciprocating plunger (5) in a compression chamber (6) and a guide chamber (11) from a fluid intake position to a delivery position. Said compression chamber (6) opens into a manifold (27), inside a block (26) from which a delivery pipe (32) and an intake pipe (31) branch off. A first seal unit (21) is housed in the guide chamber (11), a second seal unit (24) is located close to the intersection between the compression chamber (6) and the guide chamber (11) and a third seal unit (35) is positioned upstream and downstream of each valve (28, 29) and the intersection between the manifold (27) and the compression chamber (6).

WO 2005/097308 A1

CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, EG, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NA, NI, NO, NZ, OM, PG, PH, PL, PT, RO, RU, SC, SD, SE, SG, SK, SL, SY, TJ, TM, TN, TR, TT, TZ, UA, UG, UZ, VC, VN, YU, ZA, ZM, ZW, ARIPO patent (BW, GH, GM, KE, LS, MW, MZ, NA, SD, SL, SZ, TZ, UG, ZM, ZW), Eurasian patent (AM, AZ, BY, KG, KZ, MD, RU, TJ, TM), European patent (AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, HU, IE, IT, LU, MC, NL, PL, PT, RO, SE, SI, SK, TR), OAPI patent (BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG)

— *as to the applicant's entitlement to claim the priority of the earlier application (Rule 4.17(iii)) for the following designation US*

— *as to the applicant's entitlement to claim the priority of the earlier application (Rule 4.17(iii)) for the following designation US*

— *of inventorship (Rule 4.17(iv)) for US only*

Published:

— *with international search report*

For two-letter codes and other abbreviations, refer to the "Guidance Notes on Codes and Abbreviations" appearing at the beginning of each regular issue of the PCT Gazette.